CONTENTS OF VOLUME 55

NUMBER 1—JANUARY

PAGE

Announcement/Editorial 1

Performance issues in the individual channel design of 2-input 2-output systems. Part 2: Robustness issues. W. E. LEITHEAD and J. O'REILLY 3

Complete decomposition of sub-optimal regulators for singularly perturbed systems. YUE-YUN WANG and P. M. FRANK 49

Output feedback stabilization of uncertain plants: a variable structure systems approach. S. V. EMELYANOV, S. K. KOROVIN, A. L. NERSISIAN and YU. E. NISENZON..... 61

Discontinuous output feedback stabilizing an uncertain MIMO plant. S. V. EMELYANOV, S. K. KOROVIN, A. L. NERSISIAN and YU YE NISENZON..... 83

Recursive forgetting algorithms. J. E. PARKUM, N. K. POULSEN and J. HOLST 109

Fixed-order sampled-data estimation. W. M. HADDAD, D. S. BERNSTEIN, HSING-HSIN HUANG and Y. HALEVI..... 129

Construction of composite models from observed data. A. SKEPPSTEDT, L. LJUNG and M. MILLNERT 141

Model predictive control of multi-rate sampled-data systems: a state-space approach. J. H. LEE, M. S. GELORMINO and M. MORARI 153

Properties of neural networks with applications to modelling non-linear dynamical systems. S. A. BILLINGS, H. B. JAMALUDDIN and S. CHEN 193

The discrete time parametric mixed sensitivity problem. D. J. WALKER ... 225

Correspondence

Comments on the papers 'A new approach to optimum loop synthesis' and 'On the determination of plant variation bounds for optimum loop synthesis'. D. J. BALLANCE 241

Observers for descriptor systems. D. N. SHIELDS..... 249

Comments on 'State-space model identification with data correlation'. M. MOONEN and B. DE MOOR 257

Reply to comments on 'A Lur'e-type Lyapunov function for multi-machine power systems with transfer conductances'. M. SAEKI, M. ARAKI and B. KONDO 261

Editorial Note 263

NUMBER 2—FEBRUARY

Performance issues in the individual channel design of 2-input 2-output systems. Part 3: Non-diagonal control and related issues W. E. LEITHEAD and J. O'REILLY..... 265

PAGE

Continuous sliding mode control. FENGXI ZHOU and D. GRANT FISHER.. 313
H_∞ and H_2 simple controllers for robotic applications. A. CASAVOLA and E. MOSCA 329
Decentralized indirect adaptive control scheme applicable to overlapping interconnected systems. D. J. TRUDNOWSKI and D. A. PIERRE 343
Optimal output feedback control of discrete linear, singularly perturbed, stochastic systems. M. T. QURESHI, XUEMIN SHEN and Z. GAJIC... 361
Adaptive decouplers for multivariable systems: input dynamics compensation and output feedback approaches. F. C. TENG and G. F. LEDWICH .. 373
Model reference adaptive control of multivariable plants with delays. GANG TAO..... 393
Globally convergent multivariable adaptive decoupling controller and its application to a binary distillation column. TIAN YOU CHAI and GANG WANG..... 415
Model reduction for discrete unstable systems based on generalized normal representations. U. M. AL-SAGGAF..... 431
Hyperplane design techniques for discrete-time variable structure control systems. S. K. SPURGEON..... 445
Method for the global analysis of non-linear parametrized systems. B. R. HAYNES and S. A. BILLINGS 457
An application of H_∞ design to model-following. D. HO, J. LAM and T. W. K. CHAN 483
Decentralized-feedback pole placement of linear systems. X. WANG, C. F. MARTIN, D. GILLIAM and C. I. BYRNES..... 511

NUMBER 3—MARCH

Guest Editorial 521
The general problem of the stability of motion. A. M. LYAPUNOV
Preface 531
Contents..... 535
Chapter I: Preliminary analysis 539
Chapter II: Study of steady motion 591
Chapter III: Study of periodic motion..... 701
Note: Complement to the general theorems on stability..... 767
Index..... 772
Biography of A. M. Lyapunov. V. I. SMIRNOV..... 775
Bibliography of A. M. Lyapunov's work. J. F. BARRETT..... 785

NUMBER 4—APRIL

Editorial 791
Improving back-propagation learning using auxiliary neural networks. L. FORTUNA, S. GRAZIANI, M. LO PRESTI and G. MUSCATO..... 793

PAGE

Robustness measures for linear systems with application to stability radii of Hurwitz and Schur polynomials. D. HINRICHSEN and A. J. PRITCHARD 809

Classical control of active pitch regulation of constant speed horizontal axis wind turbines W. E. LEITHEAD, S. A. DE LA SALLE and D. REARDON 845

Frequency response characteristics of MIMO GPC. C. MOHTADI, S. L. SHAH and D. G. FISHER 877

Design for H_∞ almost disturbance decoupling problem with internal stability via state or measurement feedback—singular perturbation approach. H. K. OZCETIN, A. SABERI and P. SANNUTI 901

Comparison and extension of a direct model reference adaptive control procedure. G. W. NEAT, H. KAUFMAN and R. STEINVORTH 945

New dominance concepts for multivariable control systems design. L. F. YEUNG and G. F. BRYANT 969

Model reduction using new optimal Routh approximant technique. CHYI HWANG, TONG-YI GUO and LEANG-SAN SHEIH 989

Towards a bench-mark standard for stochastic adaptive control. A. NIEDERLIŃSKI and J. MOŚCIŃSKI 1009

Sliding mode control in dynamic systems. S. V. DRAKUNOV and V. I. UTKIN 1029

NUMBER 5—MAY

Robust stability of control systems: extreme point results for the stability of edges. F. J. KRAUS, M. MANSOUR, W. TRUÖL and B. D. O. ANDERSON 1039

Recursive hybrid algorithm for non-linear system identification using radial basis function networks. S. CHEN, S. A. BILLINGS and P. M. GRANT 1051

Internally exponentially stable non-linear discrete-time non-interacting control via static feedback. S.-T. CHUNG and J. W. GRIZZLE 1071

Error-feedback servomechanism in non-linear systems. H. C. TSENG 1093

H_2-optimal control of linear systems with tracking/disturbance rejection constraints. M. A. DA SILVEIRA and G. O. CORRÊA 1115

A sufficient condition for non-linear non-interacting control with stability via dynamic state-feedback: block-partitioned outputs. S. BATTILOTTI 1141

New class of discrete-time models for continuous-time systems. S. MUKHOPADHYAY, A. PATRA and G. P. RAO 1161

Adaptive control with a forgetting factor with multiple samples between parameter adjustments. V. ETXEBARRIA 1189

A discrete-time doubly coprime factorization based on the predictor-based LQG controller. TADASHI ISHIHARA, TETSUO WATANABE, LIANG-AN ZHENG and HIKARU INOOKA 1201